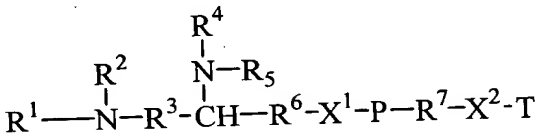
This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Presently amended) A compound having the formula



(IV)

wherein:

X^1 and X^2 are independently a direct bond or a linking atom or group selected from the group consisting of $-C(=X^3)-$, $-C(=X^3)-N(R^8)-$, and $-C(=X^3)-N(R^8)-C(=X^3)-$;

X^3 is -O- or -S-;

R^1 is acyl of from about ~~7~~ 16 to about 23 carbons;

R^2 is hydrogen or lower alkyl;

R^3 is alkylene of from 1 to about 10 carbons;

R^4 is acyl of from about ~~7~~ 16 to about 23 carbons;

R^5 is hydrogen or lower alkyl;

R^6 is a direct bond;

R^7 is a direct bond or alkylene of from 1 to about 10 carbons;

R^8 is hydrogen or lower alkyl;

P is a hydrophilic polymer; and

T is a targeting ligand which targets cells or receptors selected from the group consisting of myocardial cells, endothelial cells, epithelial cells, tumor cells and the glycoprotein GPIIbIIIa receptor.

2. Cancelled.

3. (Original) A compound according to Claim 2 wherein:

X^1 is -C(=O)-NH-C(=O)-;

X^2 is -C(=O)-;

R^1 is acyl of from about 15 to about 20 carbons;

R^3 is alkylene of from 1 to about 3 carbons;

R^4 is acyl of from about 15 to about 20 carbons; and

R^6 is a direct bond;

R^7 is lower alkylene.

4. (Original) A compound according to Claim 3 wherein:

R^1 is acyl of from about 17 to about 19 carbons;

R^3 is methylene;

R^4 is acyl of from about 17 to about 19 carbons; and

R^7 is ethylene.

5. Cancelled.

6. (Original) A compound according to Claim 1 wherein said hydrophilic polymer is selected from the group consisting of polyalkyleneoxides, polyvinyl alcohol, polyvinylpyrrolidones, polyacrylamides, polymethacrylamides, polyphosphazenes, poly(hydroxyalkylcarboxylic acids) and polyoxazolidines.

7. (Original) A compound according to Claim 6 wherein said hydrophilic polymer comprises a polyalkyleneoxide.

8. (Original) A compound according to Claim 7 wherein said hydrophilic polymer is selected from the group consisting of polyethylene glycol and polypropylene glycol.

9. (Original) A compound according to Claim 8 wherein said hydrophilic polymer is polyethylene glycol.

10. (Original) A compound according to Claim 8 wherein said hydrophilic polymer is PEG3400.

11. (Original) A compound according to Claim 1 wherein said targeting ligand comprises a peptide of the formula:

$$(Xaa)_n\text{–}Yaa\text{–}Gly\text{–}Asp\text{–}(Zaa)_m$$

wherein:

m and n are independently an integer of from 1 to about 100;

Xaa and Zaa are independently selected from the group consisting of natural amino acids and synthetic amino acids;

Yaa is selected from Arginine, Homoarginine, and Lysine-N-acetimidate; and

with the proviso that when Xaa and Zaa are sulfur containing amino acids, Xaa and Zaa may be linked together via a disulfide linkage.

12. (Withdrawn) A compound according to Claim 11, wherein:

Xaa is Glycine;

Yaa is Arginine;

Zaa is Serine;

n is 1, 2 or 3; and

m is 1.

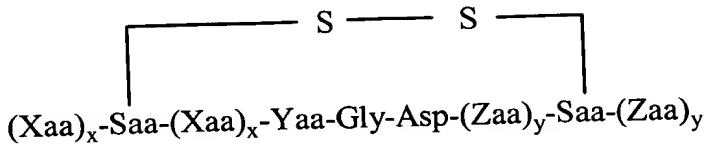
13. (Withdrawn) A compound according to Claim 12, wherein:

n is 3.

14. (Original) A compound according to Claim 11, wherein:

Xaa and Zaa comprise an amino acid independently selected from sulfur containing amino acids.

15. (Original) A compound according to Claim 1 wherein said targeting ligand comprises a peptide of the following formula:



wherein:

each x and y is independently an integer of from 0 to about 50;

each Saa is selected from the group consisting of natural and synthetic sulfur containing amino acids;

each Xaa and Zaa are independently selected from the group consisting of natural amino acids and synthetic amino acids; and

Yaa is selected from Arginine, Homoarginine, and Lysine-N-acetimidate.

16. (Original) A compound according to Claim 15 wherein:

each Saa is independently selected from the group consisting of D-Cysteine, L- Cysteine, D-Penicillamine and L-Penicillamine.

17. (Original) A targeted vesicle composition for therapeutic or diagnostic use *in vivo* comprising, in an aqueous carrier, lipid, protein or polymer gas filled vesicles, wherein said vesicles further comprise a compound according to Claim 1.

18. (Original) A targeted vesicle composition according to Claim 17, wherein said vesicles are selected from the group consisting of liposomes and micelles.

19. (Original) A targeted vesicle composition according to Claim 18, wherein said vesicles comprise liposomes.

20. (Original) A targeted vesicle composition according to Claim 19 wherein said liposomes comprise a phospholipid selected from the group consisting of phosphatidylcholine, phosphatidylethanolamine and phosphatidic acid.

21. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidylcholine is selected from the group consisting of dioleoylphosphatidyl-choline, dimyristoylphosphatidylcholine, dipalmitoylphosphatidylcholine and distearoylphosphatidylcholine.

22. (Original) A targeted vesicle composition according to Claim 21 wherein said phosphatidylcholine comprises dipalmitoylphosphatidylcholine.

23. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidylethanolamine is selected from the group consisting of dipalmitoyl-phosphatidylethanolamine, dioleoylphosphatidylethanolamine, N-succinyldioleoyl-phosphatidylethanolamine and 1-hexadecyl-2-palmitoylglycerophosphoethanolamine.

24. (Original) A targeted vesicle composition according to Claim 23 wherein said phosphatidylethanolamine comprises dipalmitoylphosphatidylethanolamine.

25. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidic acid comprises dipalmitoylphosphatidic acid.

26. (Original) A targeted vesicle composition according to Claim 17, wherein said vesicles comprise a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride.

27. (Original) A targeted vesicle composition according to Claim 26 wherein said perfluorocarbon gas is selected from the group consisting of perfluoromethane, perfluoroethane, perfluoropropane, perfluorobutane and perfluorocyclobutane.

28. (Original) A targeted vesicle composition according to Claim 27 wherein said perfluorocarbon gas is selected from the group consisting of perfluoropropane and perfluorobutane.

29. (Original) A targeted vesicle composition according to Claim 28 wherein said perfluorocarbon gas comprises perfluorobutane.

30. (Original) A targeted vesicle composition according to Claim 17 wherein said gas is derived, at least in part, from a gaseous precursor.

31. (Original) A targeted vesicle composition according to Claim 30 wherein said gaseous precursor has a boiling point of greater than about 37°C.

32. (Original) A targeted vesicle composition according to Claim 31 wherein said gaseous precursor comprises a perfluorocarbon.

33. (Original) A targeted vesicle composition according to Claim 32 wherein said perfluorocarbon is selected from the group consisting of perfluoropentane and perfluorohexane.

34. (Original) A targeted vesicle composition according to Claim 17 wherein said vesicles further comprise a bioactive agent that is different from said gas and said compound.

35. (Original) A targeted vesicle composition according to Claim 34 wherein said bioactive agent comprises a therapeutic agent selected from the group consisting of genetic material, dihydroergotamine, heparin sulfate, tissue plasminogen activator, streptokinase, urokinase, hirudin, and mixtures thereof.

36-53. Cancelled.

54. (Previously presented) A compound according to Claim 1, wherein:

X^1 is -C(=X^3)-N(R^8)-;

X^2 is C(=X^3);

X^3 is O;

R^1 is acyl of 18 carbons;

R^2 is H;

R^3 is ethylene;

R^4 is acyl of 18 carbons;

R^5 is H;

R^6 is a direct bond;

R^7 is ethylene;

R^8 is H;

P is PEG-3400; and

T comprises a peptide having the sequence CRGDC, wherein the two cysteines are linked together via a disulfide linkage.

55. (Previously presented) A targeted vesicle composition for therapeutic or diagnostic use *in vivo* comprising, in an aqueous carrier, lipid vesicles, wherein said vesicles comprise a compound according to Claim 54.

56. (Previously presented) A targeted vesicle composition according to Claim 55 wherein said lipid vesicles comprise a phospholipid selected from the group consisting of phosphatidylcholine, phosphatidylethanolamine and phosphatidic acid.

57. (Previously presented) A targeted vesicle composition according to Claim 56 wherein said phosphatidylethanolamine comprises dipalmitoylphosphatidylethanolamine.

58. (Previously presented) A targeted vesicle composition according to Claim 55, wherein said vesicles comprise a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride.

59. (Previously presented) A targeted vesicle composition according to Claim 58, wherein said vesicles comprise perfluorobutane.

60. (Previously presented) A targeted vesicle composition according to Claim 55, further comprising urokinase.

61. (New) A compound according to Claim 4 wherein:

R^1 and R^4 are acyl of about 18 carbons.

62. (New) A compound according to Claim 4 wherein:

R^1 is an acyl of from about 17 to about 19 carbons.

63. (New) A compound according to Claim 4 wherein:

R^1 is an acyl of about 18 carbons.